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ABSTRACT

An evaluation examined the efficacy of the program structure, implementation, and outcomes of the Worker Education Program (WEP), a partnership of Northeastern Illinois University; Union of Needletrades, Industrial, and Textile Employees; and 14 employers. WEP's greatest strengths were its conceptual design, program structures, relevant worker-centered curriculum, and instructional training components. Quantitative and qualitative data indicated WEP reached its process and outcome goals to a significant degree. Workers' gains in oral and written language skills and computational ability on pre- and posttests were attributed to curriculum quality, effective instruction, and well-directed teacher training component. Improvements in workplace performance and language skills were augmented in those work sites where workplace education was an integral part of human resource training and quality improvement operations. Interview and case study data from plant supervisors, workers, teachers, and staff confirmed previous findings of significant improvements in numerous communication, math, and workplace competencies. WEP had excellent potential to serve as a model for designing and implementing other WEPs due to its comprehensive framework to guide the program, collaborative workplace education planning, worker-centered and holistic curriculum and instructional approaches, formative evaluation for program improvement, and broadening the concept of workplace education. (YLB)

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ED 425 286

Worker Education Program 1994-97

Final
Evaluation Report

by

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under the direction of
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External Evaluators

Submitted to:
The Chicago Teachers' Center,
Northeastern Illinois University

The Union of Needletrades, Industrial and Textile Employees

National Workplace Literacy Program of the US Department of Education

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Introduction

The purpose of this Evaluation Report is to examine the efficacy of the program structure, implementation and outcomes of the Worker Education Program (WEP), a project of Northeastern Illinois University in partnership with the Union of Needletrades, Industrial and Textile Employees (UNITE) and 14 participating employers from Dec, 1994 to November, 1997. Furthermore, this report will assess the potential of the WEP as a model for instituting similar workplace education programs.

The primary project goals of the WEP, as stated in the Plan of Operations of the Project Proposal, served as the basis for the evaluation framework of this Report:

> The overall goal of this project... is to develop and implement a workplace literacy program that will provide workers with adult literacy skills in reading, writing, mathematics, problem-solving and English proficiency that will enhance workers' readiness for promotion and continuing employment. (p.15)

The WEP evaluation component provided formative and summative assessment activities which addressed the following program goals:

1. to enhance workers' skills in the workplace;
2. to respond to individual learning needs of UNITE workers;
3. to focus instruction on workers' workplace and personal educational needs;
4. to build a network in which partners provide Adult Basic Education, English as a Second Language, Spanish Literacy, GED, Math, and Workplace courses to interested workers;
5. to assist workers to upgrade their skills for job stabilization and job promotion;
6. to assist and prepare workers to take an active role in their union;
7. to train adult educators to meet the diverse educational needs of program participants;
8. to create meaningful, relevant, and comprehensive curricula and materials for worker reflection and workplace advancement.

(Curriculum Guide, p. 2)

This Report seeks to answer these evaluation questions:

1. To what extent were the program structures implemented?
2. How were these structures related to measured outcomes?

This Report focuses particularly on the impact of the program on the targeted worker participants by examining in detail the curriculum design and implementation, the training of the instructional staff, and the observed educational outcomes of the workers.

Efficacy of the Program Structures

WEP: Developing a Comprehensive Program

An important purpose of this Evaluation Report is to determine the extent to which program structures and administrative procedures were put in place to result in the process and outcome goals of the program. The evaluation design utilizes two approaches: (1) an assessment of program structures and systems as described in project documents (project proposal, curriculum guides, staff development plans) and (2) a formative evaluation of program structures and administrative procedures as they were implemented (interviews, observations of classes, teacher training sessions and administrative meetings; analysis of program files).

Overall Finding

One of the greatest strengths of the WEP was the comprehensive design and structure of the program. This was exhibited in the excellent leadership and vision provided by the director and professional administrative staff, a clearly articulated plan of operation, a well-researched, relevant worker-centered curriculum, a diverse, dedicated and well-supported teaching staff, an effective ongoing teacher training program, and unique partnership between the University, the Union and the Businesses. The program conducted frequent evaluation of the structure, operation, curriculum, and training in order to ensure that program and worker participants needs were being met most effectively.

ADMINISTRATIVE STRUCTURE: Leadership and Decision Making

The WEP was ably led by a core staff consisting of the program director and three training coordinators, whose experience in English as a Second Language, adult education, and labor concerns provided a solid foundation for the program. The working relationship among the administrative staff was harmonious and based on regular communication, feedback and a hands-on knowledge of the program operation at each work site. The administration maintained close contact with the teaching staff, drawing on its professional expertise to provide both moral and technical support. Many administrative decisions that impacted the teaching staff or

worker participants were made with the input of teachers and workers, reflecting the program's "participatory" approach.

One such adjustment was made in the program's assessment component, first with the development of a work-based language skills test, the GWA (General Work-Based Assessment), and secondly with the institution of special training for test administrators when the staff noticed inconsistencies in different testers' criteria for scoring the oral interview test. Attendance forms were also modified as a result of input from teachers. Teachers were also instrumental in restructuring courses into 16-week modules, thus helping to systematize curriculum implementation and assessment periods.

Worker participants voiced issues that were incorporated into lessons plans or modified the course of a lesson in progress. Students also provided feedback on specific courses and the overall impact of WEP education through questionnaires, informal comments and testimonials at recognition ceremonies. A number of them contributed directly to the planning and evaluation of courses as members of local WEP Advisory Boards. Communication between staff and teachers was frequent and valued. Regularly updated computer-based records provided valuable data for administrative and assessment purposes.

Part of the leadership vision of the WEP was to document the unique features of the WEP in addressing national workplace education goals. In this effort, the WEP produced two dissemination videos. *Partners in Progress: The Worker Education Program* (1996) profiled the WEP's unique partnership model and included footage of advisory board meetings, classes, and interviews with the stakeholders at selected partner companies. The video, which served as a mechanism for institutionalization and dissemination, was distributed at conferences and sent to educational organizations, Unions, companies, and other interested organizations. It was also aired on local public television in the fall of 1997. A second video, *Worker Education Program: Teacher Training* (1996) was also distributed to a national audience. The voices of the worker participants in the WEP were showcased in a nationally distributed anthology called *Working Hands and Active Minds: The Voices of Workers*. The WEP also published a monograph written by Florence Estes, *Partners in Progress*, which was a study of the program and its promising practices. It was distributed nationally as a companion piece to the video of the same title. Estes worked on this and other projects for the WEP before taking over

as Director of Education for UNITE after the retirement of her predecessor, Libby Saries.

ADVISORY BOARDS

The WEP administrative plan called for two types of Advisory Boards: a program-wide Advisory Board with representatives of the educational provider, all business and union partners, and local Advisory Boards at each site made up of representatives from all partners that would oversee the planning, implementation and assessment of the program. The logistics of convening a program-wide Advisory Board prevented it from becoming an independent feature of the WEP and was instead incorporated into the local advisory board model. It became evident through the program implementation process that the most successful local Advisory Board set up was one in which all partners met regularly, where there was strong leadership from the Union, and active representation and participation by management. It was a challenge for the WEP to organize Advisory Boards in which these critical elements coalesced.

Florence Estes, Director of Education for UNITE, commented that in many cases, the WEP advisory board was the first opportunity for company management and labor to sit together regularly in a non-crisis, non-conflict situation with a common goal, the education of the workers. The productive experience of the WEP advisory board model is reflected in the regular management-labor meetings that some companies have now instituted. Estes suggested that the constructive model of such meetings at Enro Shirt Company may have contributed to the success of a recent communication and conflict resolution class for supervisors and workers there. At Juno Lighting, the board was also successful, with increasingly vocal worker participation. At Joseph and Feiss Company, she said, it was a model advisory board. "Workers were articulate, very involved in creating the program, polling members...clear about goals, not afraid to be equals to management in meetings." In fact, the advisory board took an active role in the selection of an instructor for one of its classes. The board members sat in on a demonstration class of a potential teacher, didn't like what they saw, and requested a new teacher. (interview, 11/97)

At Suncast Corporation one worker member described the Advisory Board experience as follows, "The first few times I attended the Advisory Board meetings, I didn't talk, but gradually I could understand. I could see through these meetings

how the three parties (company, union, educators) were motivated to help us learn English; they were all very interested in supporting us. (interview, 6/97)

Bob Staes, Advisory Board member and Safety Director at Juno commented that the board meetings allowed members to "get to know each other much better now. We are more open and honest with each other. We can joke around. We can tell Conrad (plant manager), 'You didn't do your job!'" (interview, 3/97). Juno Lighting and Joseph and Feiss Company are examples of WEP partners that had an effective Advisory Board set up, one which greatly facilitated the successful implementation of the program.

SATELLITE SITE ADMINISTRATION

The addition of satellite factory sites in Louisville, Kentucky, Cleveland, Cincinnati and Bolivar, Ohio this grant period created new administrative challenges for the Chicago-based program. The business partners in Louisville were Enro Shirt Company, a maker of men's dress shirts and ties, and National Linen, an industrial laundering facility for restaurants and hotels. In Bolivar, Ohio, the WEP operated at Cable Manufacturing and Assembly, a producer of automobile cables, offering classes in math and communications, with sign language support for two hearing impaired students. In Cleveland, the participant company was Joseph and Feiss, a maker of top line men's suits. In Cincinnati, classes were provided for workers at Cindus, a crepe paper manufacturer, Kendall-Futuro, a manufacturer of health supplies, and Brazos Sportswear. The WEP conducted a careful search for educational providers in those municipalities that would serve as liaisons and provide the actual class instruction in accordance with WEP guidelines. These partnerships provided the WEP with an opportunity to develop effective administrative strategies that maintained the personal, hands-on quality of the program, customized curriculum and training workshops for the local educational staff, and it expanded the predominantly Latino population base of the WEP to include participants from Asia, Africa, and Eastern Europe, as well as native speakers of English.

Although the logistics of coordinating these satellite sites was at times problematic, the WEP used each challenge as a learning opportunity. It strove to convey the essential worker-centered focus of the program to the site administrators, but

learned to be flexible about how this philosophy was carried out by the local providers. At the same time, the WEP staff maintained its hands-on approach in responding to the observed needs of the satellite instructional staff. When a local teacher mentioned a need for particular support materials or teaching suggestions for multi-level classes, for example, the WEP created customized training sessions, sending a training staff member to the site for immediate assistance, often one-on-one. The local providers also benefited from participation in the program. The educational provider in Louisville, whose previous experience was exclusively with native English speaking workers, commented that through involvement with the WEP, it learned about the unique features and considerations involved in operating an ESL (English as a Second Language) program, the need for which was increasing in its community. The provider felt better prepared to address the needs of the ESL population in future projects as a result of its partnership in WEP. (interview, Donna Hill, WEP liaison, Jefferson Community College, 10/96)

WORKPLACE EDUCATION CURRICULUM

The Curriculum for each workplace was created based on a comprehensive assessment of skills in language and communication, math, problem-solving and other basic work tasks required in jobs at the sites. The Curriculum Guide incorporated current research in the fields of adult education, second language acquisition, and workplace literacy and reflected the participatory nature of the program, allowing for the addition of relevant worker-generated topics and materials as the program progressed. This type of curriculum, whether for English as a Second Language, Math, or other basic skills, required instructors to keep records of what was covered in class, inserting new lessons as requests were made, and adjusting the measured course objectives to reflect this evolving curriculum design. Over the duration of the project, the WEP developed over 25 individual curriculum guides for courses as diverse as ESL, Math, Customer Service, Communications, Teamwork and Problem-Solving in the Workplace.

This design, while being one of the most challenging, was particularly appropriate for a Union-based workplace program such as the WEP. This worker-centered strategy recognized that "learning is a democratic, inclusive, and open process...Individual needs and differences are respected, and each learner takes responsibility for setting his or her own learning goals." (Worker-Centered

Learning: A Union Guide to Workplace Literacy. AFL-CIO Human Resources Development Institute, 1990, p. 25) The Program director, Margart Boyter-Escalona, described the WEP philosophy as one in which "the learners, or workers, are the root of all the learning that takes place...If we come in as educators and union leaders and company and just talk at the workers because we think we know what they need to function as better workers and union members, we're off the mark. We really need to focus in on what the workers themselves tell us that they need on their job and in their lives." (video interview, *Partners in Progress*, 1996)

The WEP successfully met the challenge of using an evolving curriculum by engaging teachers in the development of site-specific and often worker-generated curriculum objectives, materials and assessment tools based on the core themes addressed in the Curriculum Guide. The Guide specified learning objectives (e.g., "to be able to answer Quality Control questions from machine operator, supervisor"), language skills needed to accomplish the objectives (e.g., "structures and vocabulary related to weights, measurements, comparisons - It's too heavy"), lesson activities (e.g., "dialogues, role-play reporting a machine breakdown, grammar practice on comparisons in QC situations"), and materials such as specific textbook sections, company products and handouts, etc. (Curriculum Guide, 1993, "Quality Control" unit).

The Guide also provided specific goals for each workplace course and a site-specific vocabulary list. The Curriculum format challenged teachers to continually assess the needs of their students and translate their observations into concrete class lessons. The Curriculum component of the WEP was one of its greatest strengths, providing a pragmatic framework for course design. One new teacher at an industrial laundering factory in Louisville was grateful to have such a comprehensive Guide, saying that she found it "clear and useful" and that it prompted her to request a plant tour so that she could better prepare for a couple of the units in the Guide. The WEP reflected its commitment to a thorough, pragmatic framework with clearly defined guidelines in the process and product of the Curriculum Guide design.

INSTRUCTION AND TEACHER TRAINING

The program's interest in securing quality instructors was apparent in the initial interview questions that applicants were asked. The interview asked teachers to reflect upon their teaching philosophy and experience, their pedagogical approach, their record-keeping skills, their knowledge of labor unions and ability to work in union-management settings, and the positive contributions they would make to a worker-centered educational program. It was important to the WEP to have teachers who had a clear understanding and commitment to the philosophical and structural underpinnings of the program, namely that it was a participatory worker-centered partnership. Instead of simply sending teachers home with a copy of the WEP *Guide to Effective Program Practices*, the WEP staff organized a group activity that asked teachers to read and respond to sections of the Guide with a partner and then the group. Questions included the following: "What do you think are the most important goals and factors of this program model?" "Why do you think this structure (advisory board) is important to establish at our participating companies?" "Summarize the staff development model. Do you think this model provides adequate support for you as teachers?"

It is the conclusion of this Report that the teachers effectively met the unique challenges of a worker-centered instructional program by developing lessons drawn from the workers' experience at the workplace and facilitating class activities that were worker-centered. Many teachers developed unique, work site specific activities by incorporating actual product parts, company forms, memos, and other relevant materials. One instructor at a plastics factory asked a department supervisor for an owner's manual to teach part names and numbers, copies of production line forms, as well as ongoing comments on specific skills of workers that he noticed needed attention. This kind of thorough and site-specific attention was apparent in the instructional preparation of many teachers. The teachers were dedicated and sensitive to the needs of their students. They were able to speak in detail about individual students, and kept written accounts of students on monthly progress checklists.

The teacher training component of the WEP was outstanding. The program director commented on a number of occasions about her belief in the critical importance of continuous quality staff development. Mini lessons, modeling, development of hands

on instructional materials, team teaching, and moral and professional support were a consistent part of the training. A teacher training video was produced to acquaint instructors with the foundations of WEP philosophy and methodology. Regular teachers' meetings gave the staff an opportunity to reflect on their teaching practices, and to expand their understanding of an eclectic array of methodologies that complimented the participatory nature of the program. Training topics included *Creating Activities for Multi-Level Class Lesson Plans, Cooperative Learning, Union Issues in the Workplace, Team Teaching Initiatives in the ESL for the Workplace Classroom, ESL Pronunciation, Adapting Authentic Materials for the Workplace, the Language Experience Approach, Teaching Grammar Inductively, Less Teacher Talk in the ESL Classroom, and Assessment and Evaluation.* Teachers were encouraged to develop instructional approaches that benefited all types of learning styles including visual, aural, and kinesthetic. In order to assist teachers in understanding the operation of the work site and in designing relevant workplace-specific lessons, they were given guided tours of the work site, and whenever possible, were also a part of the initial task analysis. The training coordinators did an exemplary job of facilitating the professional growth of the teaching staff.

The WEP faced the challenge of implementing a worker-centered approach to instruction for adult learners who were frequently in a formal educational setting for the first time or the first time in a very long time. They were most often products of teacher-centered, rote-based educational systems. It is not uncommon for students from such backgrounds to expect a teacher-centered classroom in which students do not take initiative. The following classroom incident reveals the success of the WEP learner-centered approach in terms of students taking responsibility and initiative in class.

In an ESL class at Suncast, a plastics factory, students were practicing a prepared list of questions for interviews with their supervisors. In the midst of practice, several students spoke up, suggesting they put the questions into their own words and add other questions to make the exercise more natural and relevant for them. They were clearly comfortable directing their own learning in a class environment that was respectful of their views. A lively exchange of opinion on what types of questions and wordings to use ensued. Their teacher commented that she always had material in reserve, but often "the students lead the class."

As a part of ongoing professional development, teachers attended regional conferences and workshops, both as participants and presenters. Teachers were encouraged to document successful lesson activities and materials which could be shared with other WEP teachers as well as with other professionals. Among the numerous conference titles presented by WEP staff were *Customizing Activities and Lesson Plans for the Workplace* (Illinois TESOL/BE, Skokie, IL., Oct. 1996), *Integrating Basic Software with Basic Skills* (AAACE Conference, Charlotte, NC, Oct. 1996), *Promising Practices for All Stakeholders in Workplace ESL Programs* (International TESOL, Chicago, March, 1996), *Staff Development and Workplace ESL: A Symbiotic Relationship* (Second Workplace Education Conference, Milwaukee, WI, April, 1997).

Classroom observations were also an integral part of ongoing professional development. Teachers were observed regularly by training coordinators using an evaluation instrument rating five aspects of the class: 1) the classroom atmosphere, 2) the lesson itself, 3) variety in learning activities, 4) student participation, and 5) feedback and correction. The teacher answered pre and post questions about the lesson and rates his or her own instruction. It was a clear objective of this program component to promote a reflective attitude in teachers toward their work. Teachers commented on the usefulness of observations and practical follow up support from the training staff.

RECRUITMENT, PLACEMENT, AND MONITORING STUDENT PERFORMANCE

Recruitment of students was one of the greatest challenges for the WEP. A number of incentives were used to meet enrollment targets including work site open houses, frequent visits to the work sites, promotional rallies and special events, and printed announcements. One instructor noted that he enrolled several new students directly as a result of testimonials given by veteran students at a special recognition ceremony. Recruitment is enhanced when there is strong support of the union and management at the work site. Some workers who expressed interest in the program were unable to attend classes due to work shift conflicts, problems with car pools or child care arrangements. The WEP was committed to providing as many opportunities as possible for workers to participate by offering classes at convenient times and stipends to cover childcare and transportation.

Students were given a series of tests to determine appropriate program placement in ESL, Math. and other courses. These included the B.E.S.T. (Basic English Skills Test), Holistic Writing Sample, the T.A.B.E.(Test of Adult Basic Education), and the General Work-Based Assessment developed by the WEP. Student progress was monitored through Pre and Post Tests, Student Files, Progress Checklists, Anecdotal Records, and Attendance Records. The program-specific General Work-Based Assessment made it possible to begin measuring language skills in a work-related context for the first time. Both this tool and the revised Progress Checklist were developed as a result of the WEP's continuing search for the most effective ways to evaluate participants. It was evident that the WEP maintained thorough and effective methods to place and monitor the progress of students.

COLLABORATION BETWEEN PARTNERS AND PARTICIPATING BUSINESSES

One of the most important goals of the WEP was to have workers, employers, university, union, and community participation in the program planning and implementation. Program administrators and staff dedicated significant time and effort to working with the participating companies to ensure the successful implementation of the workplace education plans. These plans greatly facilitated the recruitment and retention of students and were linked to performance and reward policies of the work site. This was one of the great successes of the program for it linked quality work and workplace education policy and strategic planning. Moreover, it was one of the best indicators of the extent to which management was committed to the goals of the workplace education program.

Ronald Willis, Manager of UNITE, Chicago and Central States Joint Board, observed:

> The partnership works only if it is a true partnership because it takes away the fear that one side is using the program to its own ends, and if you have all four elements involved in this program, which it is...you have a true partnership. No one party can dictate the terms of how the program is going to be run...That in its truest form is a partnership. (video interview, *Partners in Progress*, 1996)

The following comments from the management of Juno Lighting is reflective of the view of companies committed to workforce education.

> The education and training of workers ought to be seen as a long term investment worth the eventual returns. Basic skills education is a growing process in that you don't see results from the beginning classes, but as people feel more comfortable with the language, English in this case, they grow in the job...Empowering people to resolve issues is important. Management dictating solutions doesn't necessarily dictate the correct solutions. The people who work in their jobs day in and day out have a better understanding of what the problems are than the people who sit in the ivory towers. (Bob Staes, Safety Director, in Estes, Partners in Progress, p. 6)

Jack Songster, production manager at Futuro in Cincinnati put it simply, "I think WEP is a positive thing. If the worker becomes more educated, more confident in him or herself, then the program is worthwhile. You can't quantify the effects of increased confidence." (interview, 4/97)

FORMATIVE EVALUATION

Information about program operations, student participation, curriculum and instruction, and training was an important part of policy making, administration, and program monitoring. Both internal and external formative evaluation activities provided timely and critical data for WEP needs. These activities included elicitation of feedback from advisory boards, work site personnel, teachers and other staff, classroom observations by WEP training coordinators, program director and external evaluator, interviews with students, teachers and program staff by the external evaluator, review of student files and attendance records, and review of tests and curriculum implementation. Modifications and refinements of program strategies and structures were made on the basis of this formative evaluation data.

Process and Outcome Results

WEP: Meeting the Educational Needs of Workers

Several language, basic skills and worker performance indicators were examined to assess the effectiveness of the Worker Education Program. To determine student progress and to evaluate program outcomes, the following information was gathered on each worker participant:

Background Information: sex, age, country of birth

Employment: company, work position

Length of Employment in current workplace

Education: years of schooling

Class Attendance Hours

Pre and Posttest scores on BEST (oral and literacy subtests) and TABE (math subtest)

Pre and posttest Writing Samples in Spanish and English

Pre and posttest scores on the GWA (General Work-based Assessment)

Comments of progress by teachers

Examples of student work from portfolios

Additional process and outcome information was obtained from observation of classes, program staff meetings, interviews with work site managers and supervisors, and interviews of students, teachers and program staff. This data was used to determine the extent to which students improved their workplace language and basic skills and improved workplace performance.

Overall Findings

There was significant progress found in measures of language and math skills of a sample population as a result of participation in WEP classes. Gains were measured on five tests: the BEST Oral Subtest, the BEST Literacy Subtest, a Holistic Writing Sample, the GWA (General Work-based Assessment), and the TABE Math Subtest. The average gain on the BEST Oral Subtest was 6.7, on the BEST Literacy Subtest, 5.3, on the Holistic Writing Sample, 1.0, on the GWA, 7.1, and on the TABE Math Subtest, 1.6 (See following Tables). These gains are meaningful, particularly in light of the educational and language backgrounds of the participants. The average years of schooling was 7 and the vast majority of students were non-native speakers of English.

Student writings, anecdotal records by teachers, and interviews with work site supervisory personnel and WEP staff revealed important information about the impact of WEP classes on the participants' workplace performance and their personal lives. These case studies provided evidence that the WEP is effectively meeting its stated objectives (See Case Studies).

PROFILE OF WORKER EDUCATION PROGRAM STUDENTS

The WEP served a total of 1,321 students in classes and workshops during the evaluation period. Of these, 920 (70%) were women and 401 (30%) were men. The majority of participants this grant period were Latino (54%), Asians constituted 12%, workers identifying themselves as whites made up 23%, blacks, 9%, and others, 1%. The worker participants were employees at 33 different businesses, most of which were light manufacturing plants. Students ranged in age from 18 to 80 and represented over 20 nationalities.

For the purposes of this evaluation, an analysis was made of the pre and post-test outcomes of a select sample of 144 of the students that attended long-term classes. The sample represents a cross section of the primary constituents of the WEP, namely ESL students. Table 1 and 2 provide background information for each student in the sample. The tables show that the majority of participants were female (74%), were born in Mexico, completed an average of 7 years of school, and were employed in their current work site for an average of 6.2 years. The average age of

the participants was 37. The students in the sample represent a cross section of the major participating ESL work sites. Most were employed as machine operators, assembly workers, material handlers, and garment industry workers.

Not included in the sample are students who attended mini-courses and workshops. The effectiveness of these trainings was measured through student self-assessment and course evaluation forms, interviews and anecdotal information from participants, instructors, and work site personnel.

Table 1

Profile of a Select Sample of Participants*
Worker Education Program 1994-97

Participant	Sex	Age	Birthplace	Years of Schooling	Company	Position	Years of Employment
1.	F	36	Mexico	4	Juno	assembly	5
2.	F	34	Mexico	4	Juno	assembly	4
3.	M	26	Mexico	11	Suncast	material control	3.5
4.	F	75	Mexico	3	UNITE	teacher aide	5
5.	F	58	Mexico	7	Juno	assembly	13
6.	M	58	Mexico	3	UNITE	labor	15
7.	F	21	Honduras	9	Juno	assembly	1
8.	F	32	Cuba	12	Nat'l Linen	dryer	1
9.	M	29	Mexico	9	Suncast	trainer	4
10.	F	29	Mexico	9	Suncast	machine operator	10
11.	F	31	Mexico	9	Juno	assembly	1.5
12.	M	33	Mexico	7	Juno	forklift driver	12.5
13.	F	29	Mexico	7	Juno	assembly	12
14.	F	42	Mexico	0	Juno	assembly	7
15.	F	33	Mexico	9	Juno	group leader	13
16.	F	35	Guatemala	7	Juno	machine operator	4
17.	M	31	Mexico	12	Juno	warehouseman	10
18.	F	34	Mexico	4	Juno	assembly	15
19.	F	50	Korea	6	Enro	collar work	2.5
20.	F	37	Mexico	7	Juno	assembly	5
21.	F	49	Cuba	12	Nat'l Linen	feeder	.5
22.	F	58	Ukraine	10	Enro	tie presser	3
23.	F	32	Mexico	3	Juno	line leader	7
24.	F	27	Mexico	7	Juno	machine operator	6
25.	F	40	Mexico	7	Juno	assembly	6
26.	F	59	Puerto Rico	0	UNITE	housekeeper	19
27.	F	52	Mexico	3	Juno	assembly	12
28.	F	30	Mexico	7	Suncast	trainer coordinator	10
29.	M	31	Mexico	7	Suncast	assistant foreman	4
30.	M	22	Mexico	7	Juno	assembly	1.5
31.	M	45	Mexico	0	Juno	receiving supervisor	4.5
32.	F	40	Mexico	6	Suncast	machine operator	1.5
33.	F	46	China	7	Oxxford	floor lady	17
34.	M	29	Mexico	9	Suncast	lead man	8
35.	F	46	Mexico	7	Suncast	molding machine	2.5

Participant	Sex	Age	Birthplace	Years of Schooling	Company	Position	Years of Employment
36.	F	31	Mexico	3	Juno	group leader	17
37.	F	25	Vietnam	12	Nat'l Linen	fit and fold	2
38.	F	40	Mexico	6	Suncast	quality inspector	10
39.	M	62	Mexico	3	Juno	assembly	12.5
40.	F	21	Mexico	7	Juno	assembly	5
41.	F	37	Mexico	3	Juno	assembly	11
42.	M	35	Mexico	9	Suncast	forklift driver	9
43.	F	19	Mexico	7	Suncast	machine operator	1
44.	F	19	Mexico	3	Suncast	machine operator	1
45.	F	40	Mexico	6	Suncast	quality inspector	8.5
46.	F	40	Korea	7	Enro	collar set	16
47.	F	35	Egypt	12	Enro	collar	2
48.	F	36	Mexico	0	Suncast	trainer	9
49.	F	37	Guatemala	12	Juno	assembly	2
50.	M	25	Mexico	3	Suncast	receiving operator	7.5
51.	M	39	Mexico	3	Suncast	molding operator	4
52.	F	42	Mexico	3	Juno	assembly	4
53.	F	41	Mexico	2	Juno	assembly	4.5
54.	M	24	Mexico	10	Suncast	trainer	2
55.	M	40	Mexico	7	Juno	material handler	4
56.	F	26	Mexico	8	UNITE	maintenance	2
57.	M	27	Mexico	7	Juno	assembly	7
58.	F	25	Cuba	0	Nat'l Linen	feeder	3
59.	M	21	Mexico	0	Suncast	extrusion operator	2
60.	M	58	Mexico	7	Juno	assembly	17
61.	F	54	Mexico	7	Juno	assembly	15
62.	M	27	Mexico	10	Juno	shipping	1
63.	F	31	Mexico	12	Enro	sew sleeves	.5
64.	M	20	Mexico	7	Suncast	material handler	1.5
65.	F	39	Korea	7	Enro	seamstress	6
66.	F	36	Vietnam	12	Juno	assembly	1
67.	M	40	Mexico	7	Suncast	trainer	6
68.	F	37	Cuba	7	Nat'l Linen	ironer	.5
69.	F	33	Mexico	3	Juno	assembly	10
70.	F	27	Vietnam	2	Nat'l Linen	folder	2.5
71.	F	58	Vietnam	12	Enro	seamstress	3.5
72.	F	39	Mexico	6	Juno	assembly	4
73.	F	37	Mexico	7	Juno	assembly	8
74.	M	47	Guatemala	12	Juno	assembly	3
75.	F	47	Korea	12	Enro	sewing machine	11
76.	F	35	Cambodia	3	Nat'l Linen	feeder	3
77.	F	38	Korea	10	Enro	seamstress	15.5
78.	F	50	China	11	Oxxford	machine operator	8
79.	F	25	Vietnam	7	Enro	sewing machine	4.5
80.	F	48	Vietnam	12	Enro	cuff set	4

Participant	Sex	Age	Birthplace	Years of Schooling	Company	Position	Years of Employment
81.	M	33	Vietnam	7	Enro	bottom hem	5
82.	F	29	Vietnam	12	Enro	sewing machine	5
83.	F	47	China	3	Oxxford	machine operator	16
84.	M	40	Mexico	7	Juno	shipping	4.5
85.	M	36	Mexico	7	Suncast	foreman	12
86.	M	25	Mexico	12	Suncast	forklift driver	5
87.	M	21	Mexico	7	Juno	assembly	1.5
88.	F	23	Vietnam	10	Nat'l Linen	feeder	1
89.	F	43	China	7	Hartmarx	machine operator	20
90.	M	42	Mexico	5	Juno	maintenance	17
91.	F	23	Mexico	11	Suncast	machine operator	3
92.	F	45	Mexico	12	Juno	group leader	10
93.	F	32	Mexico	8	Juno	assembly	7.5
94.	F	68	Guatemala	7	Juno	assembly	5
95.	F	41	Mexico	3	Juno	assembly	10
96.	M	41	Mexico	7	Suncast	machine operator	1.5
97.	F	24	USA	12	Enro	shipping clerk	3
98.	F	48	Belarus	12	Enro	sewing machine	1
99.	F	44	Mexico	7	Suncast	molding trainer	7
100.	F	41	Vietnam	3	Enro	sew collar	7.5
101.	F	55	Vietnam	5	Nat'l Linen	feeder	5
102.	F	30	Vietnam	3	Nat'l Linen	feeder	5
103.	F	52	Vietnam	12	Juno	assembly	.5
104.	F	52	Vietnam	7	Enro	Yoke	5.5
105.	F	40	Vietnam	10	Enro	bottom hem	4.5
106.	F	23	Vietnam	12	Nat'l Linen	sheets	2
107.	F	73	Mexico	3	UNITE	--	25
108.	M	26	Mexico	7	Suncast	leadman	3
109.	M	35	Mexico	7	Juno	material handler	5
110.	M	34	Mexico	7	Suncast	set up	6
111.	F	39	Mexico	3	Hartmarx	inspector	19
112.	F	25	Vietnam	12	Nat'l Linen	feeder	1
113.	F	24	Vietnam	7	Enro	cuff set	2.5
114.	F	21	Vietnam	3	Enro	bottom hem	2.5
115.	F	44	Vietnam	12	Enro	sewing machine	4
116.	M	52	Vietnam	12	Juno	trac lighting	1
117.	F	44	Mexico	9	Juno	group leader	13
118.	F	25	Vietnam	9	Enro	set cuffs	5.5
119.	M	32	Mexico	7	Juno	group leader	12
120.	F	60	Mexico	3	Juno	assembly	6

Participant	Sex	Age	Birthplace	Years of Schooling	Company	Position	Years of Employment
121.	F	25	Mexico	0	Suncast	trainer	4.5
122.	M	47	Mexico	7	Suncast	janitor	8
123.	M	40	Mexico	9	Juno	assembly	2.5
124.	M	29	Cuba	9	Nat'l Linen	docker	.5
125.	F	51	Mexico	3	Juno	assembly	11
126.	F	42	Mexico	12	Juno	assembly	1.5
127.	F	50	China	7	Oxxford	seamstress	6
128.	F	23	Laos	12	Enro	bottom hem	2
129.	F	36	Korea	12	Enro	cuff attach	1.5
130.	F	32	Cuba	12	Nat'l Linen	table operator	1
131.	F	50	Vietnam	3	Juno	assembly	4
132.	F	47	Columbia	7	Enro	sewing machine	9.5
133.	F	45	Mexico	3	Juno	assembly	7
134.	F	25	Vietnam	6	Nat'l Linen	feeder	1
135.	F	28	Vietnam	12	Enro	cuff	4.5
136.	F	26	Vietnam	12	Enro	top collar	2
137.	F	27	Mexico	7	Suncast	machine operator	4
138.	M	29	Mexico	7	Suncast	forklift driver	8
139.	F	38	Mexico	0	Juno	special signs	7
140.	F	25	Cuba	3	Nat'l Linen	table operator	1
141.	F	30	Cuba	18	Nat'l Linen	lead person	.5
142.	F	33	Mexico	3	Juno	assembly	3
143.	F	44	Hong Kong	7	Suncast	quality control	10
144.	F	45	China	7	Oxxford	part checker	6.5

* Data compiled from a select sample of class participant files (1321). n = 144

Table 2

Summary of Background Data on Sample Participants*
Worker Education Program 1994-97

Sex	
Female	106
Male	38

Age	n	Age	n
19	2	41	4
20	1	42	4
21	5	43	1
22	1	44	4
23	4	45	4
24	3	46	2
25	10	47	5
26	4	48	2
27	5	49	1
28	1	50	4
29	7	51	1
30	3	52	3
31	5	54	1
32	5	55	1
33	5	58	5
34	3	59	1
35	5	60	1
36	5	62	1
37	5	68	1
38	2	73	1
39	4	75	1
40	10		

Birthplace	
Belarus	1
Cambodia	1
China	6
Columbia	1
Cuba	8
Egypt	1
Guatemala	4
Honduras	1
Hong Kong	1
Korea	5
Laos	1
Mexico	86
Puerto Rico	1
Ukraine	1
USA	1
Vietnam	25

Years Schooling	
0 yrs	8
2 yrs	2
3 yrs	26
4 yrs	3
5 yrs	2
6 yrs	7
7 yrs	46
8 yrs	2
9 yrs	11
10 yrs	6
11 yrs	3
12 yrs	27
over 12 yrs	1

Years in Present Work Site	
less than 1 yr	5
1+ yrs	21
2+ yrs	15
3+ yrs	10
4+ yrs	19
5+ yrs	13
6+ yrs	8
7+ yrs	9
8+ yrs	6
9+ yrs	3
10 to 15 yrs	24
16 to 20 yrs	9
over 20 yrs	1

*Data compiled from Table 1

CLASS ATTENDANCE

A wide range of class attendance hours is evident in Table 3: from one hour to 535 hours. Such variance can most likely be attributed to the fact that students enrolled in classes at different times and may have taken more than one class simultaneously, rather than to regularity of attendance. Table 3 also includes pre and posttest gain scores on the three language progress tests. An analysis of the data indicates that there does not appear to be a correlation between hours of attendance and gains in scores.

Gains on BEST Oral, BEST Literacy, Holistic Writing, GWA and TABE Tests

Pre and posttest scores for language and math were examined for the sample of 144 students. Test results and gain scores are listed in the following Tables. Blanks are left for tests that students were not administered. Students enrolled solely in math classes have only math scores recorded.

Gain scores for the BEST Oral, Holistic Writing Sample, and the GWA are given in Table 3. As can be observed from the scores, nearly every student in the sample shows a gain. For some students the gain is quite substantial. In a few cases, the score remains unchanged from pre to post. This is not surprising in the field of second language acquisition where progress can be observed at different rates of speed, with some learners maintaining plateau levels for some time before making an often significant leap in ability as measured on tests. In some cases, the student scored close to the maximum possible on both the pretest and posttest, thus showing little or no gain. This suggests the need for an instrument that can discriminate at the higher levels of English as more students advance in their fluency.

The range of gain on the BEST Oral was from +0 to +25 with an average gain of +6.7. The BEST Literacy test was administered only to those in more advanced classes since it requires a firm grasp of English reading and writing skills. The range of gain on the BEST Literacy was +0 to +18. The average gain was +5.3. The third language test given was a Holistic Writing test. This test did not evaluate discrete writing skills, but rather a student's ability to compose and express ideas in a coherent text. The scores recorded on Table 3 were from students who had sufficient English ability to write at least the posttest in English. Pretest scores of "0.0" indicate that the student was unable to write in English at that time. It is significant that in each of these cases, the student was able to write in English for the posttest. The range of gain on the Holistic Writing was +0 to +4.0 with an average gain of +1.0.

An assessment tool, the General Work-Based Assessment (GWA), was developed by the staff in response to an observed need for a measure of specifically work-related language skills. The GWA was subsequently adopted by the Illinois Secretary of State's Literacy Office as an approved tool for use in its own workplace programs, and was distributed nationwide to over fifty programs. The GWA is a promising instrument for work-based ESL assessment that addresses the issue of contextual validity for language tests, particularly in light of the specific program goal to enhance the work-related language skills of participants (see details in "Process and Outcome Results"). The GWA measured a student's English listening, speaking, reading and writing ability in a work-based context. Gains were substantial on this test, ranging from +0 to +32. The average gain was 7.1.

Students who were enrolled in math classes were given the TABE Math subtest and those pre and posttest scores are recorded in Table 4. Math students who were also enrolled in language classes as well are marked with "+" after their ID number. Without exception, students who demonstrated progress in math also did so in English language skills, as measured on the BEST Oral, BEST Literacy, Holistic Writing, and GWA tests. It might be construed that positive learning experiences in one subject area contribute to overall learning success in other areas since students become adept at the study skills and attitudes that enable them to succeed. As can be seen in Table 3 and Table 4, some students present scores in both language and math since they were enrolled in more than one class during this evaluation period. Although the number of math students in the select sample is small, math score gains were observed in nearly all of these students. The range in gains was +0 to +5 with an average gain of 1.6 points.

Table 3

Class Attendance and Pre and Post Scores on BEST Oral, GWA and Holistic Writing Tests

Worker Education Program 1994-97

PARTICIPANT	Class Hours	BEST Oral*			Holistic Writing**			GWA***		
		Pre	Post	Gain	Pre	Post	Gain	Pre	Post	Gain
1.	15	8	9	1	1.0	3.0	2.0	-	-	-
2.	102	3	10	7	1.0	4.0	3.0	-	-	-
3.	43.5	-	-	-	2.0	2.5	0.5	41	46	5
4.	252.5	24	36	12	2.0	3.0	1.0	37	46	9
5.	348	8	20	12	0.0	3.0	3.0	25	39	14
6.	192	10	12	2	0.0	0.5	0.5	-	-	-
7.	38	2	2	0	-	-	-	-	-	-
8.	54	29	32	3	-	-	-	47	47	0
9.	100	24	28	4	2.0	3.5	1.5	41	46	5
10.	60	20	32	12	4.5	4.5	0.0	33	47	14
11.	24	28	34	6	4.0	5.0	1.0	-	-	-
12.	17.5	-	-	-	3.0	5.0	2.0	46	47	1
13.	119.5	2	25	23	2.0	2.5	0.5	1	33	32
14.	75	4	5	1	0.0	1.5	1.5	23	26	3
15.	56	9	21	12	0.0	3.0	3.0	45	50	5
16.	84	21	22	1	3.0	4.0	1.0	39	45	6
17.	524	36	40	4	4.5	6.5	2.0	47	50	3
18.	76	20	31	11	3.0	3.5	0.5	-	-	-
19.	13	28	35	7	0.0	1.5	1.5	-	-	-
20.	55	28	34	6	2.5	4.5	2.0	46	50	4
21	26	4	10	6	-	-	-	-	-	-
22.	180	19	19	0	-	-	-	-	-	-
23.	141	30	31	1	2.0	2.5	0.5	33	37	4
24.	128	30	32	2	2.5	5.0	2.5	45	50	5
25.	114	18	21	3	2.5	3.0	0.5	31	42	11
26.	98	30	30	0	0.0	3.0	3.0	-	-	-
27.	141	8	13	5	0.0	1.5	1.5	17	24	7
28.	68.5	-	-	-	6.0	6.0	0.0	35	45	10
29.	96	21	23	2	2.5	3.5	1.0	33	39	6
30.	84.5	-	-	-	0.0	1.5	1.5	-	-	-
31.	32	33	33	0	2.0	2.5	0.5	46	46	0
32.	40	4	17	13	0.0	3.0	3.0	36	47	11
33.	134	20	27	7	2.0	2.5	0.5	30	48	18
34.	73.5	25	32	7	3.5	3.5	0.0	47	47	0
35.	93.5	3	12	9	1.5	2.0	0.5	17	27	10

PARTICIPANT	Class Hours	BEST Oral*			Holistic Writing**			GWA***		
		Pre	Post	Gain	Pre	Post	Gain	Pre	Post	Gain
36.	238.5	9	24	15	1.5	3.0	1.5	35	45	10
37.	28	22	27	5	1.0	1.0	0.0	27	35	8
38.	62	-	-	-	3.0	4.0	1.0	-	-	-
39.	535	4	13	9	1.5	1.5	0.0	12	27	15
40	242.5	-	-	-	3.0	3.5	0.5	-	-	-
41.	254.5	6	19	13	-	-	-	-	-	-
42.	105	28	28	0	2.5	2.5	0.0	23	32	9
43.	80.5	1	4	3	0.0	1.0	1.0	16	32	16
44.	79	0	5	5	0.0	1.0	1.0	-	-	-
45	76	11	18	7	0.5	0.5	0.0	-	-	-
46.	22	-	-	-	3.0	4.0	1.0	-	-	-
47.	181	-	-	-	4.5	4.5	0.0	-	-	-
48.	51	-	-	-	0.0	3.0	3.0	-	-	-
49.	53.5	16	3	7	2.0	2.5	0.5	-	-	-
50.	40	22	39	17	2.5	2.5	0.0	-	-	-
51.	117	8	15	7	1.0	1.0	0.0	18	24	6
52.	133	18	21	3	0.0	3.0	3.0	15	30	15
53.	133	28	29	1	3.0	3.0	0.0	45	48	3
54.	72	2	9	7	0.0	2.0	2.0	25	35	10
55.	62	27	28	1	2.5	2.5	0.0	34	40	6
56.	67	28	35	7	-	-	-	-	-	-
57.	24	-	-	-	3.5	3.5	0.0	39	43	4
58.	17	10	28	18	-	-	-	-	-	-
59.	30	16	24	8	-	-	-	-	-	-
60.	72	28	30	2	2.5	3.0	0.5	34	39	5
61.	112	26	29	3	2.0	2.5	0.5	34	39	5
62.	68	23	36	13	3.0	3.0	0.0	-	-	-
63.	91	39	39	0	3.0	3.0	0.0	-	-	-
64.	72.5	11	19	8	1.5	1.5	0.0	-	-	-
65.	31	-	-	-	-	-	-	-	-	-
66.	97.5	34	34	0	5.5	6.0	0.5	45	50	5
67.	66	9	21	12	2.0	2.0	0.0	35	37	2
68.	10	1	15	14	-	-	-	-	-	-
69.	461.5	27	30	3	2.5	3.0	0.5	-	-	-
70.	25	1	12	11	0.0	0.0	0.0	-	-	-
71.	153	-	-	-	4.5	4.5	0.0	-	-	-
72.	32	-	-	-	4.5	4.5	0.0	-	-	-
73.	175.5	18	20	2	2.5	3.0	0.5	36	40	4
74.	65	3	26	23	0.0	3.5	3.5	39	50	11
75.	93	40	40	0	3.0	3.0	0.0	-	-	-
76.	60	25	32	7	1.0	2.0	1.0	-	-	-
77.	45	-	-	-	4.0	4.0	0.0	-	-	-
78.	188	19	24	5	2.5	4.0	1.5	28	40	12
79.	136	36	37	1	3.0	3.5	0.5	-	-	-
80.	47	39	39	0	-	-	-	-	-	-

PARTICIPANT	Class Hours	BEST Oral*			Holistic Writing**			GWA***		
		Pre	Post	Gain	Pre	Post	Gain	Pre	Post	Gain
81.	151	21	21	0	2.5	2.5	0.0	-	-	-
82.	110	38	41	3	3.5	3.5	0.0	-	-	-
83.	171	29	35	6	4.5	5.0	0.5	46	48	2
84.	157	-	-	-	-	-	-	-	-	-
85.	48	30	34	4	-	-	-	-	-	-
86.	62	-	-	-	0.0	4.0	4.0	48	49	1
87.	46	2	6	4	0.0	2.5	2.5	-	-	-
88.	45	12	36	24	-	-	-	-	-	-
89.	143	32	39	7	4.0	5.5	1.5	38	48	10
90.	105	27	28	1	1.0	2.0	1.0	25	30	5
91.	20	28	29	1	5.0	5.0	0.0	46	49	3
92.	48.5	21	29	8	2.5	3.0	0.5	37	49	12
93.	78.5	12	15	3	0.0	1.0	1.0	35	40	5
94.	82	15	20	5	0.0	2.0	2.0	-	-	-
95.	447	28	29	1	3.0	3.0	0.0	45	48	3
96.	40	10	31	21	3.0	5.0	2.0	41	49	8
97.	49	-	-	-	5.0	5.0	0.0	-	-	-
98.	120	-	-	-	4.0	4.0	0.0	-	-	-
99.	36	-	-	-	0.0	4.0	4.0	39	45	6
100.	105	33	34	1	2.0	3.5	1.5	-	-	-
101.	59	20	32	12	-	-	-	11	19	8
102.	19	32	32	0	-	-	-	-	-	-
103.	123	17	28	11	4.0	4.5	0.5	34	45	11
104.	91	-	-	-	3.0	3.0	0.0	-	-	-
105.	105	-	-	-	2.5	5.0	2.5	-	-	-
106.	51	20	34	14	1.5	1.5	0.0	26	36	10
107.	213.5	28	32	4	1.0	2.5	1.5	30	44	14
108.	104.5	6	29	23	-	-	-	46	49	3
109.	73	23	24	1	2.0	2.5	0.5	30	44	14
110.	85	-	-	-	2.5	3.5	1.0	46	48	2
111.	81.5	26	26	0	-	-	-	-	-	-
112.	30	27	27	0	0.0	2.0	2.0	-	-	-
113.	182	22	30	8	-	-	-	-	-	-
114.	174	24	28	4	-	-	-	-	-	-
115.	121	28	30	2	3.0	3.5	0.5	-	-	-
116.	121	25	37	12	2.5	6.0	3.5	45	50	5
117.	129	28	29	1	2.5	3.0	0.5	34	47	13
118.	94	-	-	-	3.0	4.0	1.0	-	-	-
119.	412	4	5	1	-	-	-	-	-	-

PARTICIPANT	Class Hours	BEST Oral*			Holistic Writing**			GWA***		
		Pre	Post	Gain	Pre	Post	Gain	Pre	Post	Gain
120.	339	27	33	6	1.5	2.0	0.5	17	30	13
121.	81.5	6	20	14	-	-	-	41	43	2
122.	114.5	25	29	4	-	-	-	-	-	-
123.	151	-	-	-	-	-	-	-	-	-
124.	24	31	33	2	-	-	-	-	-	-
125.	106	11	13	2	1.0	2.5	1.5	-	-	-
126.	98	4	29	25	0.0	2.5	2.5	44	45	1
127.	148	24	27	3	4.0	4.5	0.5	40	43	3
128.	91	-	-	-	4.0	4.0	0.0	-	-	-
129.	34	19	27	8	-	-	-	-	-	-
130.	25	-	-	-	1.0	2.5	1.5	33	36	3
131.	51	7	31	24	1.0	2.5	1.5	27	43	16
132.	101	-	-	-	3.3	4.0	0.5	-	-	-
133.	135	5	7	2	-	-	-	-	-	-
134.	26	10	32	22	0.0	1.5	1.5	-	-	-
135.	130	23	37	14	-	-	-	-	-	-
136.	53	-	-	-	3.0	3.0	0.0	-	-	-
137.	77	20	31	11	3.0	5.0	2.0	43	47	4
138.	20	32	33	1	3.0	3.0	0.0	36	42	6
139.	640	28	33	5	2.5	3.5	1.0	38	45	7
140.	73	36	40	4	-	-	-	46	49	3
141.	1	18	28	10	1.5	1.5	0.0	40	41	1
142.	111	6	19	13	0.0	2.5	2.5	32	35	3
143.	137	39	40	1	-	-	-	48	50	2
144.	137	30	40	10	5.0	5.5	0.5	48	50	2

*BEST Oral = Basic English Skills Test, Oral Interview Subtest (Maximum score = 40)
**Holistic Writing = Holistic Writing Test in English (Maximum score = 6.5)
***GWA = General Work-Based Assessment (Maximum score = 50)

Table 4

Pre and Post Scores on BEST Literacy* and TABE Math Test**
Worker Education Program 1994-97

Participant	BEST Literacy			Participant	TABE Math		
	Pre	Post	Gain		Pre	Post	Gain
17.	54	72	18	3.	14	14	0
19.	61	61	0	11.+	10	14	4
22.	61	61	0	12.+	13	16	3
31.	49	49	0	16.+	41	43	2
47.	74	76	2	17.+	24	25	1
53.	62	63	1	30.+	8	10	2
65.	64	64	0	48.	5	5	0
71.	65	65	0	53.+	15	16	1
79.	55	68	13	69.+	8	9	1
80.	72	72	0	73.+	6	11	5
82.	52	61	9	84.	1	1	0
95.	62	63	1	95.+	15	16	1
98.	72	76	4	123.	15	15	0
100.	44	44	0	139.+	6	9	3
104.	52	65	13				
105.	54	61	7				
113.	44	51	7				
114.	60	65	5				
115.	50	66	16				
118.	48	59	11				
132.	66	67	1				
139.	44	52	8				

*BEST Literacy = Basic English Skills Test, Literacy Subtest (Maximum score = 78)
**TABE Math = Test of Adult Basic Education, Math Subtest (Maximum score = 25)

Table 5
Tests of Significance
Worker Education Program 1994-97

BEST Oral — Pre-mean and post-mean gains were highly significant at the .001 level using a paired t-test.

Holistic Writing — Pre-mean and post-mean gains were highly significant at the .001 level using a paired t-test.

GWA — Pre-mean and post-mean gains were highly significant at the .001 level using a paired t-test.

BEST Literacy — Pre-mean and post-mean gains were highly significant at the .001 level using a paired t-test.

TABE Math — Pre-mean and post-mean gains were highly significant at the .01 level using a paired t-test.

BEST Oral:

Pre-test mean	S.D.	Post-test mean	S.D.	Gain	S.D.	N
19.4	11.0	26.1	9.5	6.7	6.4	116

Holistic Writing:

Pre-test mean	S.D.	Post-test mean	S.D.	Gain	S.D.	N
2.1	1.5	3.1	1.3	1.0	1.0	114

General Work-based Assessment (GWA):

Pre-test mean	S.D.	Post-test mean	S.D.	Gain	S.D.	N
34.9	10.5	42.0	7.7	7.1	5.4	75

BEST Literacy:

Pre-test mean	S.D.	Post-test mean	S.D.	Gain	S.D.	N
57.5	9.2	62.8	8.2	5.3	5.8	22

TABE Math:

Pre-test mean	S.D.	Post-test mean	S.D.	Gain	S.D.	N
12.3	10.2	13.9	10.2	1.6	1.7	14

CASE STUDIES OF PARTICIPANTS

Case studies are valuable in that they can serve as illustrative examples of themes and patterns suggested by the quantitative measures of the program evaluation. Case studies from the WEP more clearly address the critical issues and human dimension of the program than test results. The story of the following two participants highlight these elements:

Gerardo

Gerardo has been working for 10 years at Juno Lighting, a recessed lighting factory, currently in the receiving department. He has improved his English skills through ESL classes and went on to take a GED class offered after work at the factory. He explained his attitude, "There is always something to learn. I never stop learning. I think education is the key to bettering yourself." One of the featured worker participants in the dissemination video, *Partners in Progress*, Gerardo described how the WEP had impacted his life. "Since I've been in the program, I feel confidence in myself. I became Union steward, president of our local. Without these classes I wouldn't do that." (video interview, *Partners in Progress*, 1996)

Gerardo was motivated to do independent study outside of class as well, asking the teacher to give him a novel to read. He rose to the challenge, he said, even when he found fifty new words on the first page. Through the WEP, Gerardo's English and communication skills improved. He was able to read work tickets better and his job performance became more accurate. He sat on the Advisory Board at the factory where his increasing participation and advocacy for a quality WEP did not go unnoticed, "I noticed Gerardo speaking up more...(he) spoke out against shortening class length" (Florence Estes, interview, 11/97).

Gerardo wrote candidly about his life as a worker and learner, edited here for clarity:

> I have been working here for almost ten years and I feel like this is my second house. Since I have been working in receiving, I have learned different methods and new ways on how to do the orders, and put the material in the different locations and also to ship out the necessary material for the different

companies to be painted. Also I learned how to drive a forklift and I'm still learning a lot.

We have to prepare ourselves better and better each day. I believe that education is the key for...a good future. From now on there will be a lot of changes and we have to be ready for these changes. Staying in school is your best move.

Sometimes we have real problems at (work). Sometimes we have small problems and some other times we have big problems; for example, sometimes we don't have very good communication between the company and the workers, or they want to give us a hard time for absences. A big problem that we had was last September when we had the new contract that many people didn't like and they decided to go on strike. I believe that problems are part of the work, but it all depends on us. We need to resolve the problems no matter if there are small or big. (portfolio writing samples, 12/95 to 2/97)

Gerardo, in fact, was able to use his bilingual skills as a team member in the contract negotiating process he referred to in the comments above. "Now, new employees come to him with questions about the job and the union, and he is proud to encourage them to attend the education program classes." (excerpt from Boyter-Escalona, *Outcomes of the Worker Education Program* in the newsletter of Illinois TESOL/BE, Vol.25, No. 3, 1997)

Beda

Beda also works at Juno Lighting in the special exit signs department. She came from Mexico 16 years ago, not having had any formal education in her native country because she was busy helping with her family's work. She has been with the company for 8 years and started ESL classes at the beginning level in WEP three years ago. Beda was a determined student who said she was studying:

...so I can communicate anywhere, with anyone. I want to be prepared at work, sometimes to read schedule sheets, to communicate with engineers to explain in English what's wrong with the machines. Sometimes there are no

interpreters to help us. I want a promotion to group leader someday. That requires some reading ability, and there are other positions that require more." (interview, 3/97)

Beda was motivated by her language studies to enroll in a GED class offered by the WEP as well. In addition, she attended classes three days a week at another school. She committed herself to getting that formal education she missed growing up. On the home front, Beda used to communicate with her children's teacher in Spanish, but now, she says, they speak in English. She wants to be able to communicate with non-Spanish speakers and read the letters and notices that come to the house, bills, college information, forms.

Beda made steady improvement during her participation in WEP classes. This was noticed by her direct supervisor, Angel Santiago, who commented that in the time Beda had studied English, she had come a long way. In fact, it was during the course of the WEP that Beda was promoted from assembly line to her current position in special signs. Her supervisor recalled that before, she wouldn't pick up the in-house phone to call him in his office to inform him about something on the plant floor that required his attention, but now she does. She feels more confident and independent. She can make decisions about what warrants his attention and act on it. "I have hope for her in the future to move up to more responsible positions. She's trustworthy. She's so motivated to learn English. She even goes to outside classes now, too!" (interview, 3/97)

One of Beda's instructors related an incident in which the plant manager reacted with a "Wow!" when he happened to walk by and overhear the teacher speaking with her in English after class. This was evidence that Beda was eager to practice and apply her skills at every opportunity.

Like the two previous case studies, the following quotations and summaries of other students and teachers in the WEP reveal valuable information about the reasons for taking classes, the impact of class study on job performance and job satisfaction, long-term work aspirations, and the broader implications of study on their personal and family life.

The student writing and speech samples excerpted below are striking in their candor and communicative quality. Many of these students began WEP classes unable to communicate in English at all. Not only is linguistic progress evident in these comments, but the subject matter itself is rich in information about the realities of the students' lives in class, at work, and outside the work place. It is worthy of note that many of the themes and perspectives addressed in these quotes have been incorporated into ongoing design and revision of curriculum, instructional materials, training and teaching strategies. (The quotes taken from participants in the representative sample are identified by their work site and ID number from Table 1. Other quotes are marked with the work site name.)

> My work is trainer coordinator. I train the new people and help the people when they need help. I make the schedule for the people...sometimes help the foremen when they need help. (Suncast28)

> I work at Suncast. My job quality control. My department is check all of parts for defects. For example short shot, missing holes, splay or other defects, wrong material, change of paper and more defects. I liking my job. I have 5 year working at Suncast. My foreman...is good. (Suncast10)

> My position is lead man. I work at Suncast for 8 years. Every day I have meeting in the morning and in the noon. My supervisor make the schedule and explain to me all the information we need for the production. When (I) go to the lines check all the parts we need for each job then make the shop order, make the labels, order parts for the warehouse then close the shop order for day before. (Suncast34)

> I like English class very much because I can learn and I feel happy. Thank you teachers very much. (Enro22)

> Coming to another country was very scary for me because I don't know what I will expect there. I was speaking very little English. I was afraid to speak to other people. (Enro46)

> I hope one day I speak English like American people...In Egypt I learned English as a grammar, but there was no conversation. Now I'm learning English as a practicing, I know how to talk and how to pronounce words

English and I can talk to American people. In my job I can talk and understand everyone. I'm understanding every word when my supervisor explain to me how an I do my job. The English class help me very good…I wish I can learn everything about English. (Enro47)

My company helped us to study English. I think some years later we will understand English well we will work better. (Enro70)

The following three pairs of writing samples, written several months apart, show how students themselves see their progress:

a) It's hard for me when I speak English. I can hear and understand they say, but I can't answer. I hope I study English help me can speak well.

b) Now I can speak English and I communicate with Americans better because in the company had English class. I very like it. My teacher is very nice. I writing and speaking English well because she teaches me. (Enro79)

aa) The first time I here I did joining…my machine have trouble every time. I don't like my machine and I can't talk with my supervisor because I don't know speak English well. I'm very sad.

bb) I very like my job because they're have English class in my job after I leave at 3:00 p.m. on Monday to Thursday. I learn more English. I want write and reading and talking English very well. (Enro82)

aaa) I like my job but my English still not good so sometime mechanic come to fix my machine I can't tell him what happen. I only use my hand…sometimes I can't tell my supervisor how happen, so now I try learn English well.

bbb) My supervisor name is Gail. She is very nice and she is a good supervisor because anytime I have trouble I tell her and (she) help me. Before I can not speak English with her. I only use my hand and saw her

everything I need. Now I can talk with her everything I want. I come to class everyday so now I can read and write something. (Enro105)

I would like to say thank company and my teacher help me learning English at Enro work. (Enro100)

I have been working in Return Goods Area. In this place I check everything come in from the customers. Sometimes the customers return...the product they bought. They give a reason why they are returning back the product so I have to check if the product is in good condition or is damaged...I study English because I think in this country everybody must know English because there is places where nobody speak Spanish...If I speak English, I'm going not to need nobody to help me what I need. (Juno12)

I like it (my job) because I learned more about the jobs in Juno, but the most important for me is learn English for work in high position. I don't want to stay always in the same position. Is why I'm studying English. I want to be something in the life. (Juno24)

I'm taking this class for me... I would like to be able to help my children. I have a hard time writing where someone would be able to understand what it is I'm trying to say. Hopefully by August I will have more confidence to write... that is really important for me in any job that I may have. (Enro/Riverport)

WEP instructional staff and work site supervisors and managers related the following comments about worker participants in WEP classes referring to the transformational nature of the education process:

A GED teacher told the story of Silvia, who hated math and wasn't sure she wanted to take the course at all, but since she sells jewelry for a percentage cut, she realized that the math would help her figure out and keep accurate account of her percentage cut of sales. Another student, Maria, made great progress in writing, something she had never enjoyed before. This instructor also taught a communications and problem solving class for supervisors that had positive impact on the plant floor, as later reported by the group leaders who worked directly under these supervisors.

A Spanish literacy teacher commented that her students learned computer keyboard skills in two months, progressing from complete unfamiliarity to confident use. One of her students left class midterm and was hospitalized. After a long absence, it is often difficult for students to return to class, but this student did return because she realized that she was learning and did not want to lose what she had gained. Another student was exuberant over her newly learned literacy skills that allowed her to transcribe a favorite song, read it aloud to the class, and have a classmate sing it to the group.

Another GED teacher at a plastics factory reported that two of her students were the first English as a second language speakers selected to join a Quest Team, a group that takes initiative to improve company operations locally, and competes against other Quest groups nationwide.

At that same factory, an ESL teacher recounted work promotions of seven of her students. One of those promoted was only a beginning student in English, but much to the teacher's amazement, was able to call in to work in English to explain he had suffered a broken rib in an accident. Another of her students also moved to a more advanced class as a result of her supervisor's positive impression of her exceptional progress in English during a class visit.

A Computer Skills teacher talked about his students:

> Bill is a business agent for the Union. Before, no one paid much attention to him. Now, people come to him with problems since they know he's studying computers.
>
> One student...got promoted at Oxxford Shirt Company to a management position because the company saw that she had been studying computers. She ended up in payroll and used class to work out spread sheets for her job.
>
> Another student at Hartmarx started class here and liked computers so much that she enrolled in a college computer program.
>
> Naomi applied for a job that required more computer skills.
>
> A student at Juno was sent to computer class to learn about spread sheets because of a promotion she got that required knowledge of spread sheets.

Two students have bought their own computers as a result of this class.

Stacey Kirchoff, a teacher at Futuro/Mariemont in Cincinnati, reported that one class was able to identify benefits of rotating positions on the floor by using problem-posing in the classroom. Previously, workers were very reluctant when they were told to change positions on the floor. But when the class explored the issue of carpal tunnel syndrome and repetitive motion, they discovered that it was actually better for their own health to rotate positions. (P. Garcia, *Report on WEP in Cincinnati*, Spring, 1996)

An Applied Math teacher at Cindus, Mary Beth Grant, told of a student that didn't trust banks and kept all the money she was saving for new furniture under her mattress at home. After learning about the benefits of a savings account and how to avoid bank charges by maintaining a minimum balance, this student reported to the teacher that she had deposited her money in the bank and calculated how much she would save in unnecessary bank charges because of her new knowledge. (P. Garcia, *Report on WEP in Cincinnati*, Spring, 1996)

The Human Resources Manager at Cindus, Jane Hunter, said that the WEP courses offered workers a chance to improve reading and math skills that could enable them to bid up to higher position jobs. One student in math, she said, was inspired to go on and take the GED test, which she passed.

At Juno Lighting, the president of the local union, Ana Garcia, gave numerous examples of ways in which the WEP had improved the confidence, knowledge and work efficiency of the participants. In a group leaders' class, workers learned the correct names of tools that are sometimes requested by the engineers and how to read a routing map using accurate English terms for parts rather than the often confusing Spanish "floor" lingo many of them had used. They learned how to read labels with colors accurately so lamps would not be mislabeled with the wrong color. They learned how to make up a ticket designating product, production department, and amount. They all learned how to order materials and how to read bill of materials, something that previously only one person in the department used to do for everyone. Now, she said, everyone is able to pick up the phone or get on the computer to place an order. Before, only one person had ordered boxes as they were needed; now all of them can do this. She mentioned the success of the English

conversation tables at lunch break that have boosted the confidence level of many workers who were afraid to speak up in English before. Now many workers don't ask for translators to talk to the Safety Director, for example; they try on their own, often with dictionary in hand. In her capacity as first aid technician at the factory, the union president said, she has been able to respond to requests from workers to learn the correct English terminology for medical supplies and procedures, how to read instructions and ask for medications at a pharmacy, and how to write an injury report. She was impressed by the commitment workers had made to learning and using English confidently.

At National Linen, an industrial laundering plant in Louisville, Kentucky with 33% of their employees non-native speakers of English, the Human Resources Manager, Jennifer Wheatley, noted that since classes had begun, she saw more workers come to her and try to speak English without the help of a translator. She said that a number of new hires came to National Linen, having heard about the on-site WEP, eager to jump into class. They were disappointed to be put on a waiting list to get into classes that were already full and under way. The enthusiasm for the ESL classes was striking. In fact, one student who was feeling quite ill during her work shift came to the nursing station where she was told to go home and see a doctor. She insisted that she wanted to stay at work because she had English class that day and she didn't want to miss it. She had to be coaxed into letting a coworker drive her home. Early in the first term of classes, the night supervisor at the plant commented that he had already noticed the difference (in English use) on the floor. He greeted the class teacher saying, "I hope you're coming back next term."

At Enro Shirt Company in Louisville, Margaret Fitts, a supervisor who dealt with many of the Vietnamese employees, said that since classes had begun, she found it easier to work with them. She didn't have to "grab a translator" as much. She said there was less frustration and fewer tears when they didn't understand. One young woman would frequently break down crying when there was a communication difficulty, but now it doesn't happen often at all, she reported. The supervisors can communicate directly with the service people now; they don't have to pull people off the line to translate for a coworker. This used to happen several times a day, she said, but now it was down to once or twice a week. Another supervisor, David Looz, spoke about one worker, like many others, who before joining the WEP, hadn't known he had a union. Before, workers didn't raise problems, but now they go more often to the union steward because they are confident they will be

understood. Another sign that worker participants had begun to feel less alienated and more involved in their multi-cultural work site was their request, in English, to use the newly constructed conference room, rather than the employees snack room, for a multi-national Christmas pot luck. Previously, the Korean workers, for example, used to eat their Korean food out in their cars, hiding. Now, said Looz, they eat and share in the open because they feel they "belong"; they are not outsiders. (interviews, November, 1996)

The following student interview comments give a glimpse into the realities of immigrant life, the need to learn English and other skills, and the impact and benefits of work site classes.

> The ESL classes have been good. I learned how to fill our vacation requests, medical accident reports and write memos. Every morning I have to write out a report of schedule for the day in English with comments. I used to feel afraid when I wanted to speak to someone in English, now I feel more confidence. (Suncast3)
>
> I want to understand many things, radio, TV, to understand my children's school work and help them with it. I like the teacher in my class because she uses a lot of different methods and activities. (Juno126)
>
> I work in the molding department. I would like to work as foreman. I want to get my GED in English, not Spanish, so I'll wait until I'm ready. If I lose my job for whatever reason, English can help me get another job. I'm single now, but I may get married here and I need to learn how to live here well using English. (Suncast110)
>
> The class improves my pronunciation. I feel I can talk everything to my supervisor easier. Before I didn't know the names of rivet machine and others. (Juno66)
>
> I am a small assembly lineman. I have worked two years as part of production scheduling team. Our meetings are in English. I feel confident speaking now. At first I couldn't talk to anyone. My first priority is to learn English, then study for my GED for my future. (Suncast34)

My goal is to be foreman in shipping. I may have problems with the paper work, but I'll keep studying so I can do that job...If there's a choice about giving a job to someone with and without English skills, it's natural to pick the one who speaks English. (Suncast138)

I work as a forklift driver. Sometimes when truck drivers talk to me I don't understand everything they say and I realize I need to study more English. (Suncast)

I'm a citizen. I want equal knowledge and opportunity. (Suncast57)

I want English so I can talk to the police when they stop me, so I can defend myself. (Juno39)

I'm a trainer in extrusion department. In WEP classes I learned verb tenses. I always used present tense before. I'm also union rep and must read reports at meetings in English and answer questions. I study at home, listening to the radio, watching TV. (Suncast)

I'm a foreman in molding. To be a supervisor you need to do a lot with reports, communication. That's why I'm studying now. I also think differently now that I have a family. I want to learn so I can move up. (Suncast85)

My progress is slow...But if I know more English, I can get a promotion. That's what I'm thinking of. It's more money and responsibility. (Juno41)

I'm interested in learning because I need it to communicate. I tell my coworkers who say they don't want to study, "We go to the store and walk all over looking for something because we're afraid to ask. If you know more English, you can ask where something is without fear." (Suncast99)

My supervisor now in QC speaks only English... I only sleep three to four hours a night' it's hard sometimes, but I never miss class because I want to learn more. I think if I miss a class, I might miss a new word or something. (Suncast10)

The teachers work very hard to share with us and help us learn...I see the obstacles as challenges and try to have a positive view. (Juno74)

I use English at work every day. There aren't any others in the UPS department that speak Spanish. I can talk to John (human resources director) now without a translator. As my English developed, I got a lot of choices. I moved from material handler to forklift driver to shipping. My dream is to be manager of the UPS shipping department. I know I need more English to do that job. The WEP helped workers understand safety signs and communicate problems directly to supervisors. The company saves time and money by using direct communication, not translators. I know three line workers who moved up to shipping because of English class. I know some people who could never make conversation with coworkers. Now they can make conversation because of the classes. (Suncast)

Sometimes it's hard to have time to study as a mother, wife, etc. Sometimes I feel despair, but my family supports me to go on when I feel overwhelmed. They try to make life easier for me. My 9-year old daughter "teaches" me. Sometimes I'm busy doing laundry or something and delay our study, but she tells me, "Mama, it's time for class."(Juno126)

I ask my kids to speak English so I can learn. (Suncast)

My children, who were born in the U.S. get angry at me for not speaking English after being here for so many years, but now I'm studying. One of my coworkers said to me the other day, 'You speak so much English. Good, Maria, you are learning the language. It's good you speak the language. (Hartmarx)

I'm proud of my daughter who works here. She's bilingual. (Suncast)

Sometimes we're afraid to talk because the others don't understand us and walk off or cut us off. (Suncast)

The following testimonial statements were given by WEP students at a worker recognition ceremony:

I'm not afraid to say something. The teachers help me go where I want to go in my life. (Suncast)

I started ESL three years ago when I worked in a different department. I'm in shipping now. I have progressed. Thanks to the classes, I use English more with my supervisors. I think a basic human need is communication. (Suncast)

We have the opportunity to improve our skills. Now I'm comfortable speaking English in front of people who speak English. I speak English and Spanish at work as trainer. I hope what we learn now stays with us always. (Suncast48)

I like my job because the company provides many opportunities for different educational programs for the employees and I think with some study I can improve myself in my work. For this reason I'm interested in attending GED and math classes. (Juno123)

The following comments recount this Spanish speaking student's strong determination to learn English, but also the obstacles that stand in her way, sometimes created by her compatriots:

My 7-year-old daughter speaks English and I need English to speak with teachers at her school. I want to move up in Juno to group leader or higher Now I speak more than a year ago. I notice I speak with my boss in English even though she also speaks Spanish. She helps me. I translate for the group leader who doesn't speak much English. Sometimes other Spanish speakers laugh at me for trying to speak English. They say, "We are Mexican. We should speak Spanish." I make an effort to speak English. I don't want to stay in the same place. (Juno24)

Students in a Conflict Resolution class at Brazos in Cincinnati had these comments about the class, "It makes me understand management more." "It's invigorating, I can use my brain." "It's helped me a lot. Now I stop and think before I speak instead of just blurting out something." "I like the teacher because she's a good listener."

When asked on an evaluation form what the most useful things were that they had learned in a Juno ESL class, students gave responses such as, "I am less afraid," "I can express myself," "I know many things about my work that I didn't know before."

Students in a computer class had these comments, "We've learned so much," "The teacher has been very patient," "It's good the class is small, we can ask questions individually and get answers," "It's made me more aware of what a computer does. When I see envelopes printed now I notice they're done by computer. Before I never paid attention or noticed," "I'm not afraid of computers anymore." (UNITE)

Students in a Customer Service course at UNITE who worked in a stressful office environment expressed surprise and appreciation for the customized nature of the course. The students were impressed at how well prepared the teachers were. Through the class, participants were able to look at themselves and their office dynamics to identify many of the sources of stress and communication difficulties. One participant said, "We feel WEP is very respectful of us...We felt someone is paying attention. It was valuable to get together outside of work to get to know each other." (interviews, 10/95)

CASE STUDIES OF WORK SITES

Juno Lighting

Juno Lighting is a manufacturing plant in Illinois producing lighting fixtures. It employs over 600 workers. The WEP has been actively involved in worker education through course offerings in ESL, basic skills, GED, communication and problem-solving. According to Conrad Medina, plant manager, 60% of Juno workers participated in WEP. During the course of the program, absenteeism was reduced from 1% to less than .5%. Efficiency went up, so much so that in some cases, production outpaced sales! Medina believes in the wide ranging benefits of education:

> I'm all for education. People become more open, deal with society better. It shows in their faces that they're happier, not only at work, but in everyday life. If they can better themselves, they'll take more responsibility. I've

> noticed people helping one another more in Dept. 600. I attribute this to improved communication skills. Workers are more responsible now. Before they sat and waited to be told what to do; now they seek out what they should do. (interview, 4/97)

Medina also linked the WEP to Juno's improved competitive position in the industry:

> The program, because of the improved communication has [helped us] meet certain international standards. And therefore the products can be marketed not only in the United States but in other countries. With the improved communication, all the people working together from the supervisors to the group leaders to the workers understand what is required. Without understanding that, because of poor communication, it makes it harder to implement all of these efficiencies. (Estes, p. 6)

Bob Staes, Safety Director at Juno, credited his support of the WEP to the fact that it empowers workers to take charge of their work, their problems, their lives.

> In the past we had employees who were fearful of losing their jobs when they didn't understand English, so you would find a tendency for the employee to say, 'Yeah, I understand," and they really didn't. The benefit (of WEP) is that we have an employee that understands both English and Spanish and once the employee is enthusiastically learning English, that translates directly to the job and makes the manufacturing of our product easier. (video interview, *Partners in Progress*, 1996)

Staes described a dramatic fall in workman's compensation payments made in the preceding two year period he had served as safety director. He attributed this 90% drop in injury losses to the front line empowerment model of a special Safety Committee of workers and management whose job it was to identify safety problems on the floor and find solutions. Instead of having a hierarchical line of command in which a higher up would have to be consulted before any action could be taken on a safety condition, Staes said,

> You want to empower the people who are impacted by the unsafe conditions to take immediate action. You want a safety committee member and a line supervisor to be able to make decisions for safety immediately without a

> higher up king pin to make the decision. Conrad's (plant manager) and my view is to have local level empowerment. I see the WEP as drawing the talented, the workers who are motivated to take control of their environment, who are more assertive and try to be part of solving the problems...WEP is an avenue to excel. If it wasn't in place, Alicia (WEP/Safety Committee member) wouldn't be involved...now she can interface better with management and workers. She was chosen for the Safety Committee because of her enthusiasm for English and better management skills on her line. My personal work load has decreased because problems are resolved on the floor. In this case, it's good that I don't have work to do. It means more empowerment of workers and less dependency on the upper levels for decision making. (interview, 3/97)

Effective interaction in English is clearly essential to superior job performance and promotion. In fact, Medina stated, all the supervisor positions at Juno are filled from the line, not with outside hires. Moreover, a recent move to a new, more automated plant site necessitated acquisition of additional skills to run new machinery and fill new positions. Classes at Juno drew a dedicated pool of students and successful recruitment activities included open house festivities with promotional incentives and current and former student testimonials. The WEP faced the challenge of maintaining enrollment and dealing with the realities of workers' transportation and childcare conflicts which often made attendance difficult.

The WEP teaching staff at Juno was stable, dedicated and well liked by the students. Classes utilized work-specific language and tasks and often involved taking students onto the plant floor for hands on lessons. The students learned effective communication techniques in English and were able to describe the work they did, the tools they used, and the problem-solving approaches they took. The WEP successfully addressed the fact that the students were the experts at their job but often lacked the language/communication skills necessary to perform optimally and be considered for promotions. In addition to classes, the WEP responded to requests for additional English-speaking opportunities by facilitating an English language lunch table where students could practice their English. During one visit by the program evaluator, there was such a lively hum of conversation at the lunch table that workers sitting at the next table were clearly captivated, straining to hear what was going on. When lunch hour was over, the participants were clearly disappointed that the conversation had to stop.

> department we've bonded together more as a result of going to class together; we can help each other out with terms we don't know, breaking down words as a team effort.
>
> Customer Service was also excellent. We had a morale problem before WEP came in. We didn't realize we had attitudes that reflected poorly in patients' eyes. I can see the improvement. The front desk faces problem patients better. Now we get compliments from patients instead of complaints. (interview, 4/97)

Joseph and Feiss

Joseph and Feiss Company, located in Cleveland, Ohio, employs approximately 700 workers, producing men's tailored suits, including its trademark, Hugo Boss line. The WEP conducted classes for 101 (15%) of the workers. The Advisory Board was active, with particularly vocal worker participation. It sat in on a prospective teacher's demonstration class, decided the teacher was not suitable for their needs, and asked for a different instructor.

Pam Arendt, expediter at Joseph and Feiss, described the need for the WEP:

> In a place like this, with people of all different languages, we have a lot of communication problems. Therefore it creates a lot of problems not only on the job but just in communication itself. We needed the classes set up to better help those of us that have to deal with everybody on a day to day basis."

Arendt also discussed the mutual interest of labor and management in a positive working relationship:

> We both have a stake in it. The union wants it to work and so does the company because we can't work without the company; the company's gone, so are we. But the company needs us just the same because without us here to do the work, there's no company. Everything we do has to be done together as a team. (Video interview, *Partners in Progress*, 1996)

The teamwork concept was one that management sought to develop, as evidenced by the banners hanging on the plant floor that read, "Teamwork gets the job done." This motto was translated into action in a Conflict Resolution class which Blayne Vilk, Director of Human Resources, described as follows:

> In the current Conflict Resolution classes...union stewards and line supervisors...are cooperating, learning together how to handle the kinds of problems that come up on a daily basis on the production floor. That is going to give each the opportunity to find out a lot of things about one another that they wouldn't find out in a normal work day...The big word in industry right now...is productivity. That is what we're looking to enhance in the individual employee. (video interview, *Partners in Progress*, 1996)

Suncast

Suncast Corporation in suburban Chicago manufactures plastic hose reels, and numerous other plastic home and garden products. The WEP had significant impact on the improvement of language skills of the workforce. In total, 222 of the 450 employees (49%) went through the ESL courses. According to the director of Human Resources, John Baunach, all trainers (those who train new assembly line workers) attended ESL classes and were promoted as a result of ESL classes. Others needed to attend ESL classes in order to be fully functional. The director commented on the effect of classes on workers, saying, "I used to use Spanish phrases when I spoke with workers, but now I use English because of the positive attitude in workers who are not afraid to try to use English."

Another important issue for labor and management is workforce stability and the costs to the company of an unstable worker pool. Stability is particularly important as the industry moves toward a teamwork-based orientation, with Total Quality Management (TQM) guiding company operations. The Director of Quality Leadership, Mary Ann Mings-Tennant, noted that the trend in the industry is to grow from within the company, with significant resources committed to enhancing the skills and contributions of the existing workforce. She explained the reasons for Suncast's commitment to education:

> Suncast promotes from within. We want to help improve communication skills (of current employees) to be promoted rather than hire from outside.

> This is our most important goal as a business. At the same time, we are part of this community. We realize that we are giving back to the community by helping workers cope with everyday life communication skills as well... The WEP has had a very positive impact. (interview, 6/97)

Mings-Tennant provided an example of the team concept at work at Suncast. A team of employees, including three WEP students in ESL classes, was instructed to write up with suggestions for new computer inventory control procedures. The only ones who actually wrote up their work, in English, were the three ESL participants. Mings-Tennant was impressed by how seriously they took their task and their determination to use English, as unpolished as it may have been, rather than take the easy route of writing in Spanish and having it translated.

Mike Hamilton, the executive vice president of Suncast, commented on the noticeable increase in confidence among workers. He saw the WEP classes as an opportunity for management to observe special creative, communication and leadership talents of workers that might otherwise go unnoticed in the routine workday on the production floor. Because of the company's desire to promote from within, finding ways to identify promising candidates for promotions was important.

The Human Resources Director, John Baunach, noted fewer grievances, and the union business agent, Jesse Mendez, noticed improved confidence, morale, and that workers were less afraid to bid for jobs or speak with supervisors.

UNITE

The WEP provided class opportunities at the UNITE union facilities for workers who were unable to attend classes at their work site or who preferred off-site, after hour classes. Classes were held on weeknights and weekends in ESL, Spanish Literacy, GED and Communications through Computers. ESL classes drew especially dedicated regulars. The union was also able to offer a course in communications for its administrative staff in the Insurance Department. Attending classes at their union site gave workers a better sense of the UNITE partnership in the Worker Education Program. Many students attending classes at UNITE who were not aware of other services provided by their union were able to take advantage of them as a result of being on location every week.

Enro

Enro is a garment factory employing approximately 700 employees, 10 percent of whom have been enrolled in WEP classes. There is strong union support for the program and an enthusiastic student population has made for a thriving program. This is reflected in the following statement of the union business agent, Joe Buonadonna, "I don't need numbers to quantify effectiveness. I know this works. It's good for us. I'm a former teacher. It's been very positive. These people need help. They're hardworking. Everyone wins in this situation." Plant supervisors have noticed a rise in workers' confidence levels and language abilities and have even seen the cost effectiveness of having WEP on site. One supervisor, Margaret Fitts, commented, "It's (WEP) made a big difference. Before, mistakes were often hidden and passed on, but now workers are more willing to talk directly and we don't have to pay an interpreter when problems arise." The interpreter was customarily a coworker who would have to punch out in order to help with translation, thus losing valuable work time and slowing down the assembly process. By having more workers able to communicate well, such need for interpreters has diminished.

The observations and responses cited in these case studies concerning the effects of the Worker Education Program confirm the findings from the previous Evaluation Reports (1992-93, 1993-95) in which supervisors noted increases in English usage and self-confidence at work, better communication, improved job performance, and promotion of program participants. This data strongly indicates that the WEP was effective in attaining its goals of workplace education.

STAFF PERSPECTIVES

The teaching staff was asked to reflect on the Worker Education Program. Teachers expressed a deep sense of commitment to their particular students and felt a great deal of reward working with such motivated learners. Just as their students felt valued by the individualized attention they received, the teachers also mentioned their appreciation for the staff development activities created by responsive training coordinators. They felt well supported and were able to be responsive to their students as a result. Teachers commented on the positive attitudes that had developed in their students. Teachers expressed a common observation that students exhibited much more ease in their use of language, both written and spoken. This

increased confidence level and willingness to take risk was a significant positive outcome of the WEP.

The WEP staff training coordinators, Paula Garcia, Sabrina Budasi Martin, and Shobha Sharma, were active in providing support, training and dissemination activities for the program. Each coordinator began on staff as a teacher and often continued to teach periodically after assuming administrative positions. This enabled them to be particularly aware of the classroom realities of teachers and students as they made administrative and staff development decisions. Paula Garcia maintained her direct contact with workers by teaching courses while she took on training responsibilities. Her administrative perspective grew from her special concern and experience with the workers first-hand in the classroom. She worked with her colleague, Sabrina Budasi Martin, to develop and pilot the General Work-based Assessment. In addition to the GWA project, Martin was an energetic and effective organizer. She facilitated staff development workshops and was instrumental in organizing the WEP staff to present the work of the WEP at numerous local and national conferences. Martin also continued to teach a number of communications classes. Like her colleagues, Shobha Sharma integrated her teaching experience into her administrative perspective, resulting in excellent rapport with the teaching staff and particular sensitivity to their concerns. She took her hands-on approach to teacher training into the classrooms at Juno, where she helped familiarize a new teacher with WEP approaches by team teaching the class. Sharma was also an active conference presenter.

The staff training coordinators noted the satisfaction they felt when they saw training activities incorporated into class materials, lessons and methodology. The training staff shared responsibilities for staff development in such a way that each trainer was capable of managing many different areas. This flexibility was a positive factor and the trainers saw the benefits of working this way. They pointed to the detailed work on curriculum development and its translation to class lessons as one of the significant accomplishments of the WEP. An instructor of a Communications class at Claretian Medical Center commented that the WEP's philosophy of basing curriculum on the worker's stated needs enabled her "to probe students for <u>their</u> needs as they saw them, not like the way it is in a university setting where the syllabus is dictated. I tailor-made the program to fit them." (interview, 11/97) Under the guidance of the training coordinators, many program elements became more systematized, making teachers' work more streamlined and

program evaluation more effective. The training staff expressed its appreciation for the strong support it received from the program director. There was a clear line of support that reached from director, through trainers, to the class teacher and ultimately to the learner.

Comments of the teaching staff speak to the strength of support provided by the WEP. At the final teachers' meeting, one instructor, Nelson Choto, said, "It has been a learning process with this group. I feel good going to work...The teachers are my friends. Most places I've worked, I rarely talked to a coordinator or coworker. (Here) we share with each other...It's like you're part of a family." Another teacher, Joy Aaronson, spoke to the program staff directly saying, "I have never felt so supported as a teacher as I have here. You cared about me, supported me. It's really rare in my 16 years of teaching ESL. You modeled the way you wanted us to work with the students. With a small class, I got the chance to...develop materials and games. Whatever I needed, I felt you were there." (teachers' meeting, 11/97)

THE UNION PERSPECTIVE

The Union partner played a vital and unique role in the success of the Worker Education Program. The Union's interest was in the enrichment of the workers' lives, professionally and personally. In fact, it sought to broaden the definition of successful worker education to include not only enhanced worker performance on the job, but also personal enrichment. It clearly operated on the notion that an educated, self-confident individual can contribute even better to the workforce. Florence Estes, UNITE's Director of Education since July, 1996, summarized the Union outlook, saying, "Labor is concerned about the worker as a whole person, not only the fragmented identity as a worker...(We are concerned with) how education impacts their lives as a whole." (National Workplace Literacy Conference Labor Panel presentation, Milwaukee, 4/97)

Estes' predecessor, Libby Saries spoke to the importance of education in a changing global economy. "Our union has traditionally been a union of immigrants. The workplace is changing dramatically...The basis for this program is to teach the

language skills and the critical thinking skills to be able to function in this globally competitive workplace." (video interview, *Partners in Progress*, 1996). The Union was active in recruitment efforts and played a major role in other support services as well. The Union was able to draw on its vast resources to encourage recruitment efforts and to help workers see the value of education at the workplace. Saries believed workers might not have been as willing to reveal educational needs to management on their own, but with Union backing, they felt more able to do so. Ronald Willis, Manager of UNITE described the critical role of the Union in this process:

> Workers are skeptical of...management coming down and telling them to do something. The only way programs will work is if the Union participates...We provide the assurances to the members that it's only beneficial and they lose their inhibitions. (video interview, *Partners in Progress*, 1996)

When asked to reflect on the overall impact of the WEP, Estes remarked:

> We need more programs like this where union and management come in as equals, through the Advisory Board model. Many companies now have regular meetings that are not conflict or crisis driven...If people are participating, it's a success. It will stabilize the workplace if workers feel it's a benefit of the workplace. There are benefits to morale. It sends a message to workers that their development is important. You will get a more stable and loyal workforce that is better educated. There are great benefits of a union workplace that has a strong relationship with management. (The WEP has provided) a chance to look for new things to evaluate whether you have a good workplace, not just the bottom line. (interview, 11/97)

Saries also commented that several sites reported decreased absenteeism and an increase in motivation and teamwork attitude. In fact, the Enro plant program coordinator, Betty Lewis, reported that the WEP classes actually helped production, not hurt it. She attributed this to the fact that workers were highly motivated to work efficiently in order to finish or surpass quotas before being released for class. When problems arose on the production line, workers voluntarily returned to resolve the problems after class and work hours. There were also fewer "off-the-wall" or trivial grievances filed by workers enrolled in WEP classes. She believed this is due

to the fact that workers in classes felt that their employer and union took genuine interest in them and were responsive to their needs.

Saries related an incident in which several WEP students joined a recruitment team in its effort to unionize another plant. She believed this participation would not have happened without the confidence these workers had gained as a result of WEP classes. They were effective recruiters and realized how fortunate they were to be a part of a union when they saw the conditions that the target plant workers endured. WEP classes enabled them to articulate their views and appreciate the benefits of being in a union-supported program. The importance of membership in the Union and WEP class was apparent in the story recounted by Mike Fortner, ESL teacher at Futuro in Cincinnati. He said that the first question his recently hired students asked was, "How many days do we have to work before we can join the union?" They were clearly aware of and interested in the benefits of union membership.

The WEP administration believed it was important for instructors to be familiar with labor union history, structure, procedures and relevance to workers' lives. Special training workshops were conducted by the UNITE Education Director providing both information and opportunity for teachers to develop materials addressing union issues for their class lessons. Estes said, "Being in a union is a part of a worker's workplace culture. It is important to try to incorporate union information into the ESL curriculum." (National Workplace Literacy Conference presentation, Milwaukee, 4/97)

Finally, the Union wanted to see the WEP reach as many workers and factories as possible, allowing employers to realize its effectiveness and ultimately to be willing to take on these programs themselves as an integral part of company human resource development. Saries advocated publishing success stories in trade journals and other publications that management reads to help this process. She summed up the importance of workplace education in the future of companies, "The workplace is going to be constantly changing and workers have got to be involved in the changes."

Potential for Dissemination

WEP: A Model for Workplace Education Programs

An important aim of the WEP was to document "...a model that could be disseminated to other settings." (*Abstract* of Proposal). An analysis of the program curriculum guides, instructional materials, and interviews with WEP staff, students and business employers during this evaluation period has led to the following conclusions about the nature of the program as a model for similar workplace education projects.

1. Comprehensive Framework to Guide the Program

The WEP had a clear and well thought out philosophy, instructional framework and vision of workplace education guiding the program. This derived from current knowledge of the literature on workplace education, outstanding leadership of the Project Director, and extensive experience in the field of adult education, literacy and language development of the professional staff coordinators. As importantly, a close working relationship among the partners afforded multiple perspectives in the articulation of main goals, policy, procedures and implementation practices of the program.

2. Collaborative Workplace Education Planning

An outstanding feature of the WEP was the comprehensive task analysis undertaken at each work site in order to help formulate curriculum content and instructional strategies. This process involved all partners in the program: workers, union, management of the companies, and the university. An Advisory Board served to monitor the program overall.

It is the finding of this Evaluation Report that the greatest successes of the WEP occurred in companies where the educational program was an integral part of worker training and quality improvement.

> lives, as well as their job performance, will be enhanced. (Curriculum Guide, 1993, p. 2)

It is important, therefore, for programs involved with worker education to develop the kind of evolving curriculum that takes into account the broader issues of the worker's life and the changing workplace. The WEP was guided by this principle from its inception and consequently had the opportunity to put this into effect in its instructional training.

Summary and Conclusions

Efficacy of Program Structures

The WEP found its greatest strengths in its conceptual design, the program structures developed, relevant worker-centered curriculum, and instructional training components. These elements were instrumental in enabling the WEP to reach its desired program goals. Additional features that contributed to its success include: an emphasis on experiential learning, holistic instruction that is learner-centered, ongoing development and piloting of program and site-specific assessment tools, curricular units and instructional materials, a responsive administrative staff, and an insistence throughout on quality.

The chief conclusion of this Evaluation Report is that the WEP was successful in implementing an effective program that achieved its stated goals.

Process and Outcome Results

Both quantitative and qualitative data indicated that the WEP reached its process and outcome goals to a significant degree. Workers showed gains in oral and written language skills as well as in computational ability on pre and post tests. These outcomes are attributed to the quality of the curriculum, effective instruction, and the well-directed teacher training component. It was found that improvements in workplace performance and language skills were augmented in those work sites where workplace education was an integral part of human resource training and quality improvement operations.

Interview and case study data from plant supervisors, workers, teachers and staff confirmed previous findings of significant improvements in numerous communication, math and workplace competencies. (see "Supervisors' Checklist of Worker Competencies" in WEP Final Report, 1993-95)

WEP as a Model for Designing and Implementing Other Programs

The WEP has excellent potential to serve as a model for designing and implementing other workplace education programs. Among the chief assets are the governance structure, the visionary leadership and responsive administrative staff, an evolving curriculum design based on worker needs, teacher training and support, instructional innovation, and the formative evaluation component which provides feedback for decision making.

The collaborative nature of program planning was one of the important cornerstones of the WEP. The program consistently sought to coordinate its efforts with the human resource and quality improvement plans of individual companies. Program effectiveness was markedly enhanced when these efforts were consistent with one another. Although it is premature to measure the long-term effects of the WEP on company decisions to institutionalize the partnership model of worker education, a transition to company-initiated education programs was evident at a number of participating companies as the WEP was phasing out. At Suncast, the company instituted its own education program for workers. Similarly, at Juno Lighting, the company successfully sought funding to continue its education program through state education grants. It is fair to surmise that in other participant companies where there was a strong commitment to the partnership model of human resource development, such institutionalization may also be underway.

The WEP operated from an effective and comprehensive framework in which a unique four-way partnership of workers, company, union and university designed, implemented and evaluated the education program. The program rested on sound pedagogical foundations in its construction of curriculum based on relevant worker realities and needs. The WEP staff strove continuously to build and modify the curriculum to best serve its learner population. It encompassed workplace skills and sought to address broader issues of work advancement, career development, workers' perceptions of work and career aspirations, future work force needs, and the changing global marketplace.